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COMPARATIVE LEGISLATION BULLETIN
NO 5

MUNICIPAL ELECTRIC LIGHTING

ERNEST BRADFORD SMITH

MADISON WISCONSIN
APRIL 1906

INTRODUCTION

This department is in constant receipt of letters from city officials and members of the legislature relating to municipal electric lighting. It is often asked, "What cities have municipal plants?" "How many exist in Wisconsin?" "How many exist in America?" etc.

This pamphlet has been compiled with the idea of answering these questions. The statistics, although not complete, have been gathered from every available source. A bulletin will soon be issued upon gas plants.

CHARLES MCCARTHY
Legislative Reference Department

MUNICIPAL ELECTRIC LIGHTING

ERNEST BRADFORD SMITH

COMPARATIVE LEGISLATION BULLETIN — NO 5 — APRIL, 1906
Compiled with the co-operation of the Political Science Department of the University of Wisconsin

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Based on reports from 632 out of a total of 2,572 private plants and 320 out of 460 municipal plants, 1898-99. No figures for places of less than 1,000 population.

UNITED STATES

Increase in municipal plants

The electric lighting business began in the United States about 1880; in Wisconsin, in 1884. Since that time there has been a great increase in both the number and size of electric light plants. The following table shows the development of both private and municipal plants since 1881:

GROWTH IN UNITED STATES OF MUNICIPAL AND PRIVATE ELECTRIC LIGHT PLANTS[1] (table 1)

Year	Municipal	Private	Total no.	Per cent of municipal plants
1881	1	7	8	
1885	16	151	167	9.5
1890	137	872	[1009	13.5
1895	386	1690	2076	18.5
1900	710	2514	3224	22.02
1902	815	[2805	3620	22.5
1905 (Sept.)[2]	988	3076	4064	24.3
1906 (Mar.)	[1050	3234	4284	24.4

[1] Figures for 1881 to 1902 from U. S. Census office. Special report on central electric light and power stations, 1902, p. 106.
[2] Figures for 1905 and 1906 from Central station lists, Sept. 1905 and Mar. 1906.

From this table it will be observed that the total number of electric light plants has grown from 8 in 1881 to 4284 in March, 1906; of plants owned

by companies, partnerships and individuals, there were 7 in 1881 and 3231 in 1906; of plants owned by cities, villages or other municipal corporations, there was 1 in 1881 and 1050 in 1906. The number of municipal plants in 1885 was nearly 10 per cent of the total number; in 1895, 18½ per cent; in September, 1905, somewhat more than 24 per cent; a proportion slightly increased for March, 1906.

Carroll D. Wright reports the figures for 1899 as 460 municipal and 2,572 private plants; total, 3032. The Census bureau report for 1902 gives 815 municipal plants and 2805 private; total, 3,620.

The municipal year book, 1902, gives for cities of over 3,000 population, a total of 1,471 electric light plants, of which 278 were municipal. The Central station list, 1905, gives engineering and commercial data for 984 towns in which 988 municipally owned electric light plants exist; 2,932 towns in which 3076 plants were owned by private concerns; a total of 4,064 electric light plants in the United States in September, 1905. Six months later, March, 1906, there were 62 more municipal plants and 158 more private plants. This does not include companies furnishing power only, or mill plants lighting a local mill or factory. In the above municipal list are included five plants owned by colleges or universities and supplying light to outside consumers; and a few plants owned by cities and leased to private companies for operation.

The number of electric light plants by states is as follows:

ELECTRIC LIGHT STATIONS BY STATES — MUNICIPAL AND PRIVATE, 1906[1]
(table 2)

	Municipal plants	Towns where private plants exist	Private plants
Alabama	18	25	28
Arizona	0	16	17
Arkansas	8	42	43
California	13	94	106
Colorado	2	53	58
Connecticut	6	38	38
Delaware	6	4	4
Florida	10	25	26
Georgia	39	42	42
Idaho	2	27	28
Illinois	92	271	284
Indiana	64	116	124
Iowa	51	138	141
Indian territory	0	26	26
Kansas	17	62	65
Kentucky	13	64	64
Louisiana	14	20	20
Maine	3	57	63
Maryland	5	28	29
Massachusetts	23	93	95
Michigan	104	127	132
Minnesota	82	65	67
Mississippi	28	31	35
Missouri	51	78	88
Montana	1	24	27
Nebraska	14	57	59
Nevada	0	8	8
New Hampshire	3	45	48
New Jersey	4	79	81
New Mexico	0	13	13
New York	35	224	241
North Carolina	24	32	34
North Dakota	8	18	18
Ohio	101	153	165
Oklahoma territory	5	10	10
Oregon	10	18	18
Pennsylvania	39	234	253
Rhode Island	1	10	10
South Carolina	14	27	28
South Dakota	9	25	26
Tennessee	26	38	38
Texas	9	170	174
Utah	6	18	19
Vermont	12	39	39
Virginia	16	37	38
Washington	11	51	58
West Virginia	6	41	42
Wisconsin	46	120	123
Wyoming	0	16	16
Total in U. S.	1,050	3,080	3,231
Total of all plants in U. S. 1906			4,284

[1] These figures compiled from Central station list, March, 1906

It is difficult to keep any list of municipal plants up to date, because new plants are added so rapidly. During the months from June to December, 1905, in the pages of the *Municipal journal and engineer* and in *Municipal engineering* were given the names of over forty cities which had just installed or voted to install municipal electric light plants; while in as many more, the clerk, or mayor, or a committee of the council was investigating the subject.

Consolidation

Simultaneously with the increase in the number of electric plants, has come a consolidation of plants, the absorption of several small companies into one large concern, and the lighting of many small towns from one large central plant, a matter of common observation. At the same time, there is shown a tendency to combine electric, with gas and water works. The Census bulletin for 1902 reports 1,465 central stations out of 3,620, 40 per cent, which were run in connection with water works, gas plants, ice manufactories, etc.

Changes from municipal to private ownership

Between 1881 and 1902, 13 plants had changed from municipal to private ownership.[1] The following electric light stations began operations as municipal plants, but have since passed into private ownership:

[1] U. S. Census office, Special report on central electric light and power stations, 1902, p. 8.

CITIES WHICH HAVE CHANGED FROM MUNICIPAL TO PRIVATE OWNERSHIP (table 3)

	City	Population	Name of company
Alabama	Troy	4,097	City Electric Light and Water Plant Co.
Indiana	Bourbon	1,487	Union Water, Light and Power Co.
Iowa	Audubon	1,866	Audubon Electric Plant.
Minnesota	Fulda [1]	886	Electric Light Plant and Water Works.
New York	Waddington		Waddington Electric Light Plant.
Ohio	Xenia	8,696	Peoples Gas and Electric Light Co.
Pennsylvania	Lehighton [1]	4,629	Lehighton Electric Light and Power Station.
Texas	Honey Grove	2,483	Honey Grove Light and Power Plant.
	Itasca	1,277	Hockoday Brothers.
Virginia	Buena Vista	2,388	Buena Vista Light and Power Co.
	Wytheville	3,003	Brown Electric Co.
Washington	Vancouver	3,126	City of Vancouver Electric Light Plant Co.
	Chehalis [1]	1,775	Chehalis Electric Light Plant.

[1] Given as municipal, 1905, by Central station list, Sept. 1905.

Changes from private to municipal ownership

Of the 815 municipal plants in 1902, 645 were started as municipal plants, and 170 had been changed from private to public ownership. The municipal plants in the following cities and towns began operations under the ownership of individuals, firms or corporations:

CITIES WHICH HAVE CHANGED FROM PRIVATE TO MUNICIPAL OWNERSHIP (1881-1902) (table 1)[2]

		Pop. 1900
Arkansas	Conway	2,003
California	Alameda	16,464
	Modesto[1]	2,024
Colorado	Del Norte	705
Delaware	Milford	2,500
	Newark	1,243
Florida	Fernandina	3,245
	Kissimmee	1,132
	Ocala	3,380
Georgia	Albany	4,506
	Athens[1]	10,245
	Eastman	1,234
	Gainsville	4,382
	Griffin	6,857
	Moultrie	2,220
	Washington	3,300
Illinois	Chadwick	505
	Farmer City	1,664
	Flora	2,311
	Girard	1,661
	Hampshire	760
	Highland	1,970
	Kansas	1,019
	La Grange[1]	3,969
	Lockport	2,659
	Peru	6,863
	Princeton	4,023
	Rantoul	1,207
	Shelbyville	3,516
	Toledo	818
	Waterloo	2,111
	Wheaton	2,315
Indiana	Anderson	20,178
	Ashley	1,040
	Attica	3,005
	Bluffton	4,179
	Cambridge	1,754
	Dunkirk[1]	3,187
	East Chicago	3,411
	Garrett	3,910
	Goshen	7,810
	Greenfield	4,489
	Hobart	1,390
	Kendallville	3,354
	Knightstown	1,942
	Linton	3,071
	Lowell[1]	1,275
	Mentone[1]	757
	Mishawaka	5,560
	Montpelier	3,405
	Napanee	2,208
	Peru	8,463
	Portland	4,798
	Rockville	2,045
	Rensselaer	2,255

[1] Seven plants given as private by Central station list, Sept. 1905.

[2] Authority, U. S. Census office, 1906.

CITIES WHICH HAVE CHANGED FROM PRIVATE TO MUNICIPAL OWNERSHIP (1881–1902)—continued

		Pop. 1900
Indiana	Thorntown	1,511
	Williamsport	1,245
	Winamac	1,684
	Jonesboro	1,838
Iowa	Algona	2,911
	Bloomfield	2,105
	Fairfield	4,689
	Mount Pleasant	4,109
	Newton	3,682
	Spencer	3,095
	Spirit Lake	1,218
Kansas	Emporia	8,223
	Enterprise	1,200
	Osage City	2,792
	Seneca	1,846
Kentucky	Russellville	2,591
Louisiana	Franklin	2,692
Maryland	Laurel	2,079
Massachusetts	Belmont	2,117
	Hingham	5,059
	Hudson	5,454
	Hull	1,703
	Middleboro	6,855
	Taunton	31,026
Michigan	Badaxe	1,241
	Charlevoix	2,079
	Chelsea	1,635
	Cold Water	6,216
	Crosswell	606
	Dowagiac	4,151
	Escanaba	9,549
	Hillsdale	4,151
	Jonesville	1,367
	Lansing	19,485
	Mason	1,828
	Mendon	777
	Monroe	5,043
	Niles	4,287
	Petoskey	5,285
	Sturgis	2,465
	Union City	1,514
	Vassar	1,832
Minnesota	Alexandria	2,681
	Argyle	829
	Austin	5,474
	Blue Earth	2,900
	Brainerd	7,524
	Hibbing	2,481
	Kasson	1,112
	Long Prairie	1,385
	New Prague	1,228
	Tower	1,366
	Wadena	1,520
Mississippi	Clarksdale	1,773
Missouri	Fulton	4,383

CITIES WHICH HAVE CHANGED FROM PRIVATE TO MUNICIPAL OWNERSHIP (1881–1902)—continued

		Pop. 1900.
Missouri	Lebanon	2,125
	Pierce City	2,511
	Rolla	1,600
	Slater	2,502
Montana	Miles City	1,938
Nebraska	Pawnee	1,969
New York	Frankfort	2,664
	Greenport	2,366
	Watervliet	14,321
North Carolina	Goldsboro	5,877
	Morgantown	1,938
	Reidsville	3,262
North Dakota	Grafton	2,378
Ohio	Bradford	1,254
	Brerea	2,510
	Beverly	712
	Columbus Grove	1,935
	Greenfield	3,979
	Minerva	1,200
	Painesville	5,024
	Plymouth	1,154
	Troy	5,881
	Wellston	8,045
Oklahoma	Stillwater	2,431
Oregon	Hillsboro	980
	Medford	1,791
	Scio	346
Pennsylvania	Aspinwall	1,231
	Millvale	6,736
	Tarentum	5,472
South Carolina	Dillon	1,015
South Dakota	Brookings	2,346
	Pierre	2,306
	Redfield	10,015
Tennessee	Harriman	3,442
	Lebanon	1,956
	Morristown	2,973
	Newbern[1]	1,433
Texas	Sherman	10,243
Utah	Payson	2,636
Vermont	Hardwick	1,334
Virginia	Bedford City	2,416
	Front Royal	1,005
	Farmville	2,471
	Salem	3,412
Washington	Centralia	1,600
	Ellensburg	1,737
	Kent	755
	Port Angeles	2,321
	Pullman	1,308
	Tacoma	37,714
Wisconsin	Bayfield	1,689
	Cedarburg	1,626
	Florence	1,824

[1] Seven plants given as private by Central station list, Sept., 1905.

CITIES WHICH HAVE CHANGED FROM PRIVATE TO MUNICIPAL OWNERSHIP (1881-1902)—continued

		Pop. 1900.
Wisconsin	Fort Atkinson	3,043
	Jefferson	2,584
	New Richmond	1,631
	Oconomowoc	2,880
	Plymouth	2,237
	Two Rivers	3,784

In small cities

The great majority of all the electric light plants, private as well as municipal, are located in small cities.

Of a total of 3,620 plants in 1902, 2,714 were in cities of less than 5,000 population; of the 2845 private plants, 2,043 or 72 per cent; and of the 815 municipal plants, 671 or 82 per cent were in cities of less than 5,000. In 1899, in places of less than 1,000 population, there were located 9 per cent of the 2572 private plants and 9 per cent of the 560 municipal plants. In 1906, this number had increased to about 15½ per cent for municipal plants, and more than 19 per cent for private plants, as shown by the following table, compiled from the Central station list for March, 1906:

PRIVATE AND MUNICIPAL PLANTS IN SMALL AND LARGE CITIES (table 5)

	Municipal plants	Per cent.	Private plants	Per cent.
Villages of less than 1,000 population	160	15.4	592	19.3
Towns of 1,000–10,000 population	808	77.6	2,169	70.1
Cities of over 10,000 population	73	7.0	328	10.6
Total number of places..	1,041	100	3,089[1]	100

[1]Some cities have two or more private plants, making the total number of private plants 3,284, while the total number of cities and villages having private plants is 3,089.

It is evident from these figures, that the towns of less than 1,000 inhabitants have a little larger proportion of private plants. But the strength of the municipal ownership movement is in the cities of from 1,000 to 10,000 population, 77.6 per cent of all places having municipal plants being included in these limits. Seven per cent of all the places having municipal plants were of more than 10,000 population, against 10 per cent for private plants. In seventy cities there were in 1905, both a municipal and one or more private plants.

In cities over 10,000

The following table gives the list of cities of over 10,000 population, which have municipal electric light plants (1906):

CITIES OF OVER 10,000 POPULATION CONTAINING MUNICIPAL ELECTRIC LIGHT PLANTS—BY STATES (table 6)

		Pop. 1900
Arkansas	Little Rock	38,300
California	Alameda	17,350
Connecticut	New Britain	26,000
	Norwich	17,250
Florida	Jacksonville	28,400
Illinois	Aurora	24,000
	Bloomington	23,000
	Chicago (4 plants)	1,700,000
	Decatur	20,700
	Elgin	22,400
	Jacksonville	15,000
	La Salle	10,600
	Galesburg	18,600
Indiana	Anderson	20,000
	Hammond	12,400
	Huntington	19,500
	Logansport	16,200
	Marion	17,300
	Muncie	21,000
	Richmond	18,200
	Indianapolis	170,000
Iowa	Marshalltown	11,000
Kansas	Topeka	33,700
Kentucky	Henderson	10,200
	Owensboro	13,200
	Paducah	19,400
Maine	Bangor	21,850
	Lewiston	23,760
Maryland	Cumberland	17,100
	Hagerstown	13,600
Massachusetts	Chicopee	19,170
	Holyoke	45,700
	Peabody	12,000
	Taunton	31,000
	Westfield	10,000
Michigan	Bay City	27,600
	Detroit	285,000
	Grand Rapids	87,500
	Kalamazoo	24,400
	Lansing	19,500
	Marquette	10,050
	West Bay City	13,120
Missouri	Hannibal	12,800
	Joplin	26,000
	St. Joseph	103,000
	St. Louis	575,200
Nebraska	Lincoln	40,100
New York	Dunkirk	11,600
	Jamestown	23,000
	Watervliet	14,300
Ohio	Ashtabula	13,000
	Columbus	125,560
	Hamilton	23,000
	Marietta	13,350
	Newark	18,150

CITIES OF OVER 10,000 POPULATION CONTAINING MUNICIPAL ELECTRIC LIGHT PLANTS—BY STATES—continued

		Pop. 1900
Pennsylvania	Allegheny	130,000
	Chambersburg	10,000
	Easton	25,200
	Meadville	10,200
	Norristown	22,200
South Dakota	Sioux Falls	10,260
Tennessee	Nashville	80,865
	Jackson	14,500
Texas	Austin	22,250
	Fort Worth	27,700
	Galveston	37,800
	Sherman	10,240
Vermont	Burlington	18,640
Virginia	Alexandria	11,500
	Danville	16,500
Washington	Seattle	80,670
	Tacoma	37,700
West Virginia	Wheeling	38,880

Total, 73 plants. (Population given in round numbers, from the census figures for 1900)

The following states contain no cities of over 10,000 population having municipal electric light plants. Alabama, Arizona, Colorado, Delaware, Georgia, Idaho, Indian Territory, Louisiana, Minnesota, Mississippi, Montana, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Oklahoma, Oregon, Rhode Island, South Carolina, Utah, Wisconsin and Wyoming.

Street and commercial lighting

City plants are furnishing commercial as well as street lighting. From the following table it is seen that one-half of the municipal stations in 1902 furnished commercial arc lighting while more than seven-eighths furnished commercial incandescent lighting; four-sevenths of the private plants furnished commercial arc lighting and practically all (fifty-five-fifty-sixths) furnished commercial incandescent lighting. In 1902 all but 77 of the 815

municipal plants sold current to private consumers. (The total number of private stations was 2805, and of municipal stations 815):

CHARACTER OF SERVICE (1902) (table 7)[1]

	Private stations	Municipal stations	Total.
Arc lighting			
Commercial or other private	1,667	353	2,020
Public (street, etc.)	1,810	712	2,522
Incandescent:			
Commercial or other private	2,752	732	3,484
Public	1,889	602	2,491
Motor power—stationary	975	118	1,093
Electric Ry	157	2	159
All other service	152	9	161

[1] U. S. Census office. Report on central electric light and power stations, 1902 p. 11.

Investment, income and prices

Investment. The amount invested in private plants has been and is much greater than that in muncipal plants. The figures given for 1899 by Carroll D. Wright were in round numbers, $265,182,000 invested in private electric light plants, compared with $12,902,000 in municipal plants; the value of the electricity sold, was, for private plants, $56,490,000 and for municipal plants, $3,531,000. That is, the investment in municipal plants in 1899 was about one-twentieth of the investment in private plants, while the product was a little less than one-seventeenth. In 1902, the Census bureau reported an investment (cost of construction and equipment) of $482,700,000 in round numbers for private plants, and $22,000,000 for

municipal plants; with a gross income of $18,700,000 for private and $6,965,000 for municipal plants. That is, in 1902 the amount invested in municipal plants was still about one-twentieth while the value of the product was about one-eleventh.

INCOME (ROUND NUMBERS) 1902 (table 8)[1]

	Private stations	Municipal stations
From arc lighting	$22,091,000	$3,389,000
From incandescent	41,336,000	3,360,000
From all other electric service	13,960,000	88,000
From all other sources	1,585,000	128,000

[1]U. S. Census office. Special report on central electric light and power stations. 1902, p. 110.

Private stations receive more from incandescent than from arc lighting; municipal stations from each about the same. "All other electric service" is current for the operation of stationary and railway motors.

The next table is a comparison of the public or street lighting with the commercial (store or house) lighting:

NUMBER OF LAMPS IN SERVICE, TOTAL INCOME, AND AVERAGE INCOME PER LAMP, 1902 (table 9 [1])

	Arc Lamps		Incandescent Lamps	
	Commercial or other private service	Public service	Commercial or other private service	Public service
Private stations:				
Number of lamps...	168,180	166,723	16,243,853	372,740
Total income ...	$8,220,151	$13,871,616	$39,039,927	$2,257,927
Average income per lamp.	$48 88	$83.20	$2.40	$6.06
Municipal stations:				
Number of lamps...	5,793	45,002	1,494,531	82,920
Total income ...	$240,166	[2]$3,149,079	$2,868,296	$491,322
Average income per lamp.....	$41.46	$69.98	$1.92	$5.93

[1] U. S. Census office. Special report on central electric light and power stations, 1902, p. 29.
[2] Value estimated according to prevailing rates.

A careful perusal of these figures discloses the fact that private stations furnish a few more commercial arcs than public (street) arcs; while municipal stations furnish eight times as many public arcs as commercial arcs. Incandescent lighting, both by private and by municipal plants, is overwhelmingly commercial; but private stations furnish one-fortythird as many street incandescents as store and house incandescents, while municipal plants furnish one-eighteenth.

Street arcs pay private as well as municipal plants much more per arc than commercial arcs; the same is true of incandescent service.

FOREIGN COUNTRIES

Canada

There are 80 municipal electric light plants in Canada.[1] They are located in the provinces as follows:

British Columbia	6
Manitoba	1
New Brunswick	5
N. W. Territories	5
Nova Scotia	6
Ontario	50
Prince Edward Island	2
Quebec	5
Total in Canada	80

[1]Central station list, Mar. 1906.

Most of the cities have a population of less than 10,000 except St. Thomas, Guelph, Glace Bay and Kingston.

England

In England, about two thirds of the electric light plants are owned by municipalities. The following table shows at a glance the comparative situation of water, gas and electric plants. The figures are in most cases for 1903; Scotland and Ireland are not included:

ENGLISH ELECTRIC LIGHT PLANTS, 1903[1] (table 10)

	Public Plants		Private Plants	
	No. Plants	Total Capital	No. Plants	Total Capital
Water	1,045	$330,914,000	251	$197,851,000
Gas	256	173,919,000	154	375,348,000
Electricity	334	155,728,000	174	133,828,000
Street railways	142	119,061,000	154	83,660,000
Total	1,777	$779,622,500	1,033	$790,688,724

[1] U. S. Labor bureau. Bulletin, Jan. 1906, p. 5.

There are 481 municipal electric plants and 297 private electric plants in the whole United Kingdom.[1] Liverpool, Leeds, Sheffield, Birmingham, Southampton and Glasgow are some of the larger cities in the list. Municipal ownership has found much favor with the citizens of England, Scotland and Ireland.

[1] Municipal yearbook of the United Kingdom, 1906, p. 429.

WISCONSIN

In Wisconsin, municipal electric lighting began in 1889, at which time there were 30 private plants. Since then the growth has been as follows:

GROWTH OF MUNICIPAL ELECTRIC LIGHT PLANTS IN WISCONSIN (table 11)[1]

Year	No. of new municipal plants	Total municipal plants	Total private plants
1889	1	1	30
1890	1	2	31
1892	2	4	47
1893	2	6	52
1894	2	8	65
1895	1	9	69
1897	3	12	88
1898	2	14	102
1899	3	17	108
1900	4	21	112
1901	3	24	115
1902	1	28	124
1903	4	.....	.....
1904	4	.....	.....
1905, Sept.[2]	.....	40	115
1906, Mar.[2]	6	46	123

[1] U. S. Census office. Special report on central electric light and power stations, 1902, p. 106.
[2] Central station list, Sept. 1905 and Mar. 1906.

There are in Wisconsin (March, 1906) 123 private and 46 municipal electric light plants; 38 of the 123 private plants and 13 of the 46 municipal plants are in places of less than one thousand population.

Cities and villages having municipal plants

The cities and villages in Wisconsin that have municipal electric light plants are as follows:

MUNICIPAL ELECTRIC LIGHT PLANTS IN WISCONSIN (table 12)

City or Village.	Pop. 1905	Date begun operation	Cost of plant	No. of arcs	No. of incandescent lamps
Algoma	2,010	1903	$40,000	24	1,200
Arcadia	1,315		21,000	8	1,500
Barron	1,675	1902	15,000	18	1,400
Bayfield[1]	2,675	1889	15,000	20	3,000
Black River Falls	1,945		12,000	10	1,500
Blair	461	1905		6	600
Blanchardville	640	1903	6,000	8	450
Boscobel	1,635	1899	18,000	3	2,600
Cedarburg	1,680	1905			
Clintonville	1,840	1902	12,000	22	2,000
Colby	850	1903	16,000	15	450
Columbus[1]	2,388		20,000	51	4,800
Cumberland	1,495				
Elkhorn	1,820		17,500	40	2,300
Elroy	2,011				
Evansville	1,960		16,000	11	1,100
Fennimore	1,053	1901	23,000	21	300
Florence	1,940		8,000		1,500
Fort Atkinson[1]	3,390	1890	35,000	31	4,000
Grantsburg	612	1905		4	900
Greenwood	687	1906			
Independence	663	1906			
Hudson[2]	3,220			92	8,000
Jefferson	2,572		27,000		2,500
Kilbourn	1,090		15,000	20	600
Marshfield[1]	6,036			60	7,000
Mazomanie[1]	860	1894	12,000		600
Monticello	610	1904	8,000		
New Glarus	655		14,000	8	500
New London[1]	3,000	1905	20,000	51	4,000
Oconomowoc[1]	3,010	1891	42,000	50	6,000
Plymouth[1]	2,675	1902	70,000	67	4,700
Princeton	1,425	1905	13,000	29	1,100
Reedsburg[1]	2,575		17,000	25	9,000
Rice Lake	3,410	1892	10,000	27	1,700
Richland Center	2,635		25,000		2,000
River Falls	2,300	1900	35,000	36	8,000
Sauk City	750	1903	9,000	8	450
Shawano	2,445		30,000	30	1,500
Sprtug Green	770	1904	6,000	5	730
Stoughton[1]	4,240	1904	25,000	23	3,000
Sturgeon Bay	4,640		19,000	43	1,800
Thorp	875	1901	10,000	27	800
Two Rivers[1]	4,602	1902	70,000	58	4,100
Waupun	3,110	1900	20,000	46	4,500
Whitehall	700	1898		8	1,000

[1]Operated with water works.
[2]Leased to a private company.

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